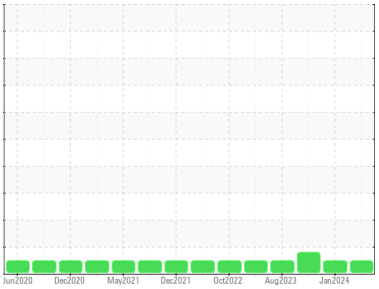
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**401198**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0111993** | GFL0090404 | GFL0090417 |
| Sample Date | | Client Info | | **21 Mar 2024** | 22 Jan 2024 | 03 Nov 2023 |
| Machine Age | kms | Client Info | | **440064** | 430886 | 18985 |
| Oil Age | kms | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >120 | **8** | 12 | 27 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | <1 | 2 |
| Nickel | ppm | ASTM D5185(m) | >15 | **<1** | <1 | 2 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **4** | 8 | ▲ 28 |
| Lead | ppm | ASTM D5185(m) | >40 | **0** | <1 | 2 |
| Copper | ppm | ASTM D5185(m) | >330 | **<1** | 1 | 2 |
| Tin | ppm | ASTM D5185(m) | >15 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **2** | 4 | 32 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **59** | 59 | 64 |
| Manganese | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **985** | 955 | 977 |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1058** | 1038 | 1112 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **1003** | 1009 | 966 |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1192** | 1151 | 1184 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2510** | 2590 | 2503 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **1** | 3 | 6 |
| Sodium | ppm | ASTM D5185(m) | | **3** | 4 | 6 |
| Potassium | ppm | ASTM D5185(m) | >20 | **1** | 2 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >4 | **0.2** | 0.3 | 0.4 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **8.5** | 9.6 | 10.2 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **19.1** | 20.3 | 23.2 |

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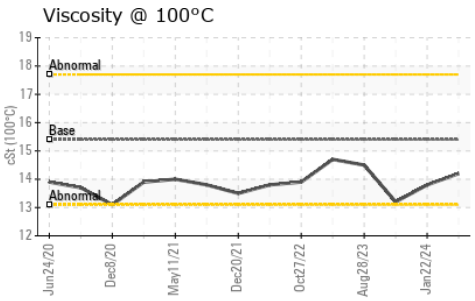
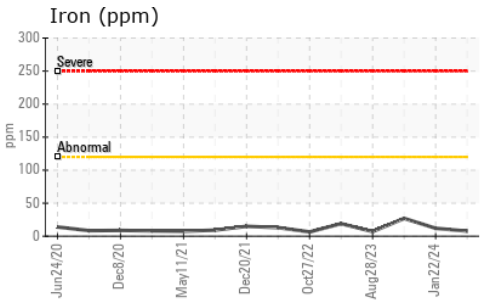


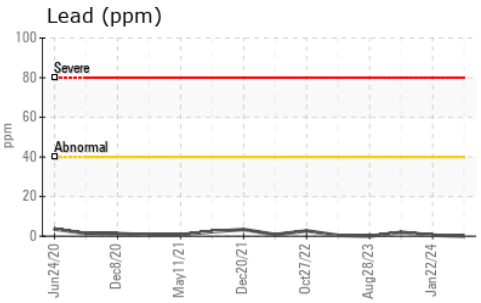

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **15.9** | 17.6 | 20.1 |

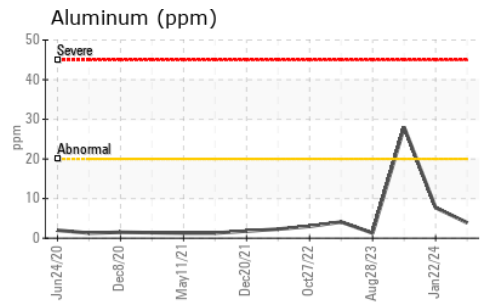
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

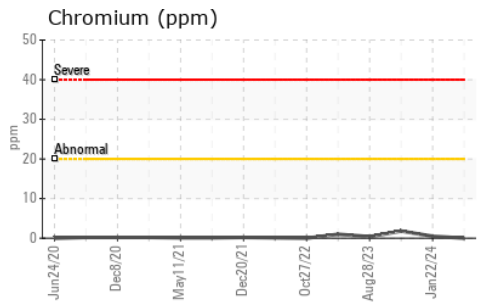
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | **14.2** | 13.8 | 13.2 |

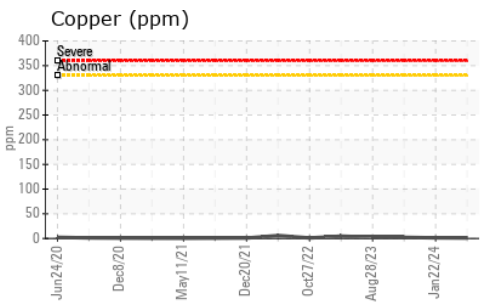
## GRAPHS

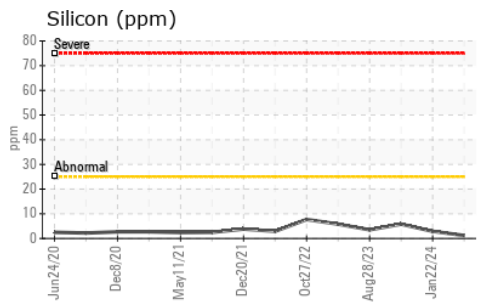


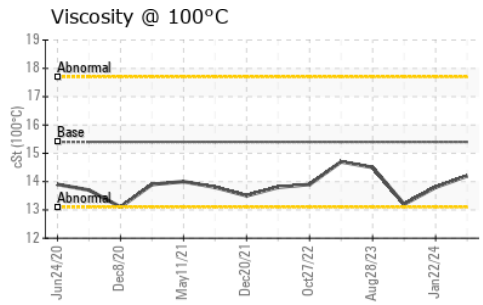



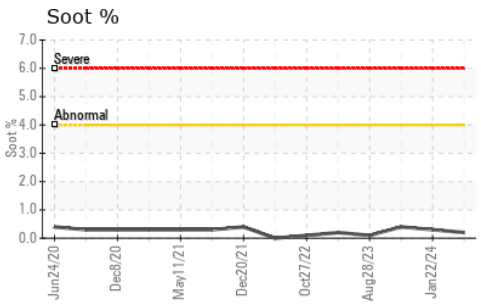




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0111993
**Lab Number** : 02625993
**Unique Number** : 5759125
**Test Package** : MOB 1

**Received** : 02 Apr 2024
**Tested** : 02 Apr 2024
**Diagnosed** : 02 Apr 2024 - Wes Davis

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*

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